Wat-er the Effects? How River Proximity and Season Affect an Insect Community

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Water is an essential resource for any animal community. Permanent water sources (e.g., rivers or lakes) allow animals to access water in the absence of sufficient precipitation, and precipitation is expected to become increasingly scarce in many global regions. Thus, my research aims to understand the importance of a permanent water source to the dynamics of an insect community, and whether the effects of proximity to a water source change across seasons that greatly vary in precipitation-- from 0.1 cm to 8.7 cm of monthly precipitation. To address these aims, pitfall sampling was performed along a portion of the Calaveras River in Stockton, CA during fall (October) and winter (January), and future sampling is planned for spring (April) and summer (July). Traps were positioned along 10 transects 50 m apart, and traps on each transect were placed from 0 m up to 50 m from the river. Traps collected insects over 5 d periods, during which ground temperature was also determined at each set of traps via temperature data loggers. After collection, insects were identified to family, and the wet and dry mass of the insects found at each sampling site were determined. These data will be used to determine how season and proximity to a water source affect temperature, and the abundance, diversity, richness, and biomass of an insect community. After sampling in the spring and summer, my research will provide new insight into the complex role of water availability in the community dynamics of an important animal taxon.